Nutrition News

PUBLISHED BY NATIONAL DAIRY COUNCIL · CHICAGO

CONTENTS

Article — *Page 5*
Tells how diet makes you what you are

Story — *Page 6*
Reports an exciting expedition

Digests — *Page 6*
Reviews some new research on foods

Study — *Page 7*
Describes benefits of more milk for children

Plan — *Page 7*
Outlines a program for improving community nutrition

News — *Page 7*
Relates interesting items about outstanding people

Books — *Page 8*
Brings you suggestions for library additions

YOU ARE WHAT YOU EAT

By VICTOR G. HEISER, M. D.
Author of "An American Doctor's Odyssey" and "You're the Doctor"

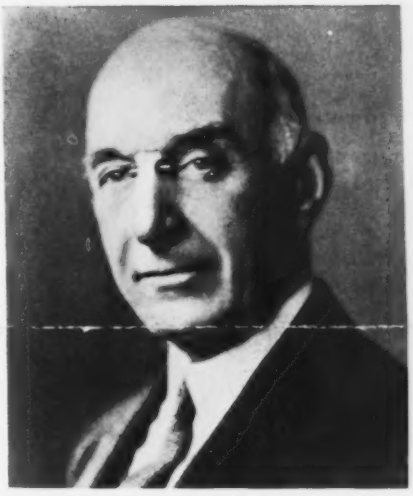
Tell a scientist what you eat and he will tell you what you are. Proof of the validity of this statement rests on observations of the dietary habits and nutritional status of the peoples of the world. In far-off India, for example, two groups of people, who are just as different physically as any people of the same race and country could possibly be, demonstrate the relation of an adequate diet to good nutrition and of an inadequate diet to poor nutrition.

The Sikhs, who live in northern India, are among the finest specimens of mankind; tall, strong and stalwart. In southern India are the Madrassi — small and poorly developed.

What is the cause of the great difference between these people? Major General McCarrison, representing Great Britain in the Indian Medical Service for many years, believed it was diet and set about to see if he was right. He found that the typical diet of the stalwart Sikhs is made up of milk, and the products of milk—butter, curds, and buttermilk—, freshly ground whole wheat made into cakes of unleavened bread, legumes, fresh carrots and cabbage, tomatoes, root vegetables, and fresh meat once a week. In contrast, the diet of the poorly developed Madrassi consists of washed polished rice, legumes, fresh vegetables, condiments, vegetable oil, coffee with sugar, little milk, cocoanut, and betelnut.

To find out conclusively if these two diets were the cause of the great contrast in the Sikhs and the Madrassi, General McCarrison performed an interesting experiment. He selected two large groups of young white rats in his laboratory. To one group he fed the diet of the Sikhs, to the other the diet of the Madrassi.

The white rats were all healthy before the experiment began, but at the conclusion of the test the animals showed the same contrast in size and vigor as the Sikhs and Madrassis. Furthermore, the Sikh-fed rats were sleek in appearance, contented in disposition, and free from disease. In contrast, those fed the Madrassi diet had rough coats, were quarrelsome and had much illness.



Doctor Heiser

Many of the diseases from which man suffers are brought about by man himself. A hundred thousand orientals die every year of beriberi and one million are constantly ill with the disease, the result of eating white polished rice from which the vitamin B_1 has been removed.

Beriberi could be wiped out if each Eastern country would levy a small tax on polished rice. Such a tax would lift the price of polished rice out of reach of the poorer classes.

In the Philippine Islands, to control beriberi, the governor-general issued an executive order requiring the use of unpolished

(Continued on Page Eight)

DECEMBER, 1939 • • VOLUME 3 • • NUMBER 2

Food MAKES A DIFFERENCE

A TRUE STORY

Exploring with Byrd means adventure and excitement. It means hard work for strong men. Months of preparation are necessary to insure continued excellent health of the men.

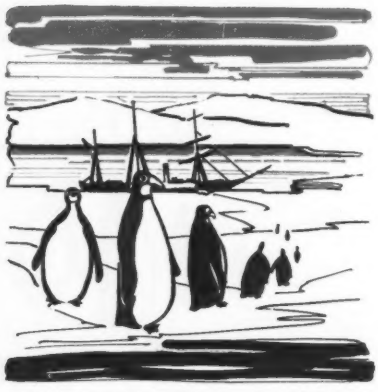
It's Southward Ho! again.

And with that, the third Byrd Antarctic Expedition took off for Little America as the first federally sponsored Antarctic trip. The goal is to make an official claim for the United States on land explored by Byrd and Ellsworth.

Travel on ice and snow differs decidedly from travel on mud, gravel, or concrete. As always, the reliable dogs are among those present. This time, the giant "snow cruiser" has been added for long trips. This spectacular machine carries four men, one year's supply of food, fuel for 5,000 miles, and an airplane.

The dignified penquins in their "formal dress" will probably be on hand to welcome the men. They have no fear of the explorers and always greet these visitors to their icy wastes.

"A polar expedition moves forward and survives mostly by brute force and by its capacity for punishment." Byrd's frequent descriptions of hardships and dangers of his earlier trips show the necessity for strong and healthy men to take this "punishment."



Lordly penquins will greet the third Byrd expedition at Little America.

They will soon be in the "largest non-shop area in the world." Food for two years is packed on the ships.

The greatest problem has been the selection of food, in order to keep these men healthy. While at the base, they may eat almost every kind of food they might have at home—if it can be prepared to keep for a long time in the intense cold. On the trail, however, the menu is more limited. Seal meat is the chief fresh food—at headquarters and on the trail.

Dairy Products Go to Antarctica

These men recognize the vital importance of milk and other dairy products. Since a fresh supply of fluid milk is not practicable, they went to great effort to provide nonperishable foods rich in the nutritive elements of milk, so necessary in their meals.

Some new dairy foods will add food value and variety to the meals. The United States Bureau of Dairy Industry has provided a dried pea soup with whey powder and a potato wafer of mashed potatoes, skim milk, and salt. This wafer has no fat and so will keep indefinitely. Even new candies containing whey solids are included.

The Bureau is also sending American Cheddar cheese packaged in valve-vented cans for long storage.

Fresh butter in a double wrapping is an important item among the supplies. They encountered difficulty in obtaining canned butter—but they had to have butter. In addition, they took other types of cheese and dried milk.

Another Christmas in the land of ice and snow! Their Christmas boxes are already packed. Byrd wrote of the 1933 holidays: "The table . . . groaned under an amazing variety of food . . . and Christmas boxes . . . were opened with eagerness. I doubt if there was anywhere . . . a gayer Christmas than was celebrated in Devil's Graveyard."

And so it's Southward Ho! again.

glances AT NUTRITION RESEARCH

New developments in nutrition research guide us in better selection of foods for health and well-being.

VITAMIN A DEFICIENCY

A new method of diagnosing vitamin A deficiency in humans has been found—a differential white blood cell count. From a study of blood pictures, one group of workers found that vitamin A deficiency is widespread and is not limited to any particular group or class of people. When the vitamin A intake was increased, the blood picture returned to normal in 3 to 5 weeks. The subjects of this study were deficient in vitamin A because their diets contained very little milk and butter.

RIBOFLAVIN IN MILK

Recent experiments show that one quart of milk supplies about two milligrams of riboflavin. As the daily human requirement of this vitamin is generally stated as one to two milligrams, it is evident that a quart of milk supplies all the riboflavin needed by the body daily.

DIETARY CALCIUM

It is important to know how closely the actual composition of diets can be approximated by calculations based on tables of food values. In one recent study, the calcium content of several representative diets was calculated and the foods then chemically analyzed for calcium. In almost all cases, the calculated values were greater than the determined values. The investigators emphasize the hazards of using calculated estimates of calcium content of diets when conducting calcium balance studies.

PHOSPHORUS IN MILK

When vitamin D is added to milk, the total antirachitic activity in rats is two to three times greater than can be accounted for on the basis of the vitamin D added. Experiments reported recently show that this is due to the phosphorus in the milk.

A SCIENTIFIC STUDY

By Dr. Helen A. Hunscher
Head of Dept. of Home Economics
Western Reserve University

The study to be described here is one in which the writer participated at the Research Laboratory of the Children's Fund of Michigan. It is one of a long series of investigations on the mineral metabolism of normal healthy children, initiated by Dr. Icie Macy, director of the laboratory. Many workers contributed to this group project which required close cooperation over a period of months. (For full references to published reports of this work see mimeographed reference sheet offered on page 8 of this issue.)

The present report is a brief resume of one phase of the study, **The Influence of Different Levels of Milk Intake on the Acid-Base Mineral Balances of Children** by Hunscher, Hummel and Macy (J. Nutrition 17:461, May 1939).

In the growing child, more base than acid must be stored. Milk yields an alkaline mineral residue, containing greater amounts of the basic elements (calcium, magnesium, sodium and potassium) than of the acidic elements (phosphorus, chlorine and sulfur) and thus addition of milk changes the percentage and proportions of the various elements in the entire diet.

Children Given Milk

Seven normal healthy children, ages 5 to 10 years, served as subjects. During a part of the study period, six children received 400 grams of milk daily for periods of 30 to 65 days; the other child received 600 grams for 20 days. During the second period of observation, two of the children received 800 grams of milk daily for 150 to 160 days and the remaining five subjects received 1,000 grams daily for 20 to 40 days.

The largest difference between the acid-base values of the diets with and without 400 grams of milk is due, for the most part, to the change in calcium content. There was an increase of nearly 200% in this element due to the milk; i.e., 400 grams of milk contributed almost twice as much calcium to the intake as did all the food constituents of the basal diet. With 1,000 grams of milk the diet contained more than eleven times as

(Continued on Page Eight)

Experts Consult on Nutrition—Dr. Hazel Stiebeling of the Bureau of Home Economics represented the United States in Buenos Aires in October, at a conference of nutritionists discussing food problems of Latin America. This meeting was an outgrowth of the League of Nations' Mixed Committee on the Problem of Nutrition.

Dr. Stiebeling loaded her 77-pound airplane baggage allowance with various educational materials found effective in teaching people in this country to buy and eat wisely for good nutrition. Copies of NUTRITION NEWS were among these materials.

Dr. Spies Speaks on Pellagra—At a meeting sponsored by the Chicago Medical Society on November 15, a talk on "Vitamin B in Pellagra" was given by Dr. Tom D. Spies, who was first to use nicotinic acid to cure this disease. Dr. Spies warned that pellagra may occur as a result of food fads and faulty diets. He emphasized the importance of an adequate diet, including a quart of milk a day, in the prevention and cure of pellagra and other deficiency diseases.

Private Physician to the World—Dr. Victor G. Heiser, author of the leading article in this issue, has earned this title. For ten years he was Director of Health for the Philippine Islands; for twenty years he was Associate Director of International Health for the Rockefeller Foundation. It is said that he has inaugurated more movements to save and prolong life than any other living person.

A PRACTICAL PLAN

By Dr. Leita Davy
Assistant Nutritionist
Ohio State Health Department

During the past two years the Nutrition Service of the Ohio Health Department has been developing an intensive Nutrition - Health Education program in Greene County. The objectives have been, first, to demonstrate that nutritional improvement, resulting from slight food habit changes, is reflected as improved physical development, health and well-being; and second, to get under way food habit changes which will improve the nutritional status of the county. Progress has been made through development of community adapted programs, centered about known nutritional needs of each school district.

Knowledge of these nutritional needs was gained by a study of the food habits of each locality, as revealed by food diaries kept for three days by 522 school children. The currently accepted standards of the "protective diet" were used for assessing the nutrition-health value of the diets.

Comparison of the food records of the various schools showed little locality difference as to type of dietary defects. Little evidence of undernourishment with respect to quantity was found, yet true undernourishment of a qualitative nature was high in all schools.

Poor Food Habits Found

Consumption of milk and milk products was low throughout. Less than half (47%) of the children averaged 1 quart of milk, while 36% had less than 1 pint per day. Failure of 16% of the group to use milk as a beverage parallels the coffee-drinking recorded by 18% of them. Only 14% of the diets included cheese. Few vegetables of any kind were used. Nearly half (46%) ate no citrus fruits or tomatoes. Whole grain foods were used sparingly in all diets, with 58% of the group having no food of this type. Refined grain food as breads, cake, cookies, and ready-to-eat cereals were used generously. With the exception of fruit, there is no apparent relation between the food deficiencies and probable financial state. It seems highly probable that these dietary shortcomings are ascribable to food habits and as such they have served as the points of attack in the Nutrition-Health campaign.

(Continued on Page Eight)

—that the pilgrims allotted one cow to every six persons? Health conditions were greatly improved after the arrival of the cows in Plymouth.

—that butter perfumed by your favorite flower may be bought in Paris?

—that fresh-harvested potatoes contain more vitamin C than potatoes kept in storage a month or longer?

—that government scientists have invented a new food article from surplus by-products: namely, wafers or chips made of cull potatoes, skim milk, and salt?

—that cheddar cheese was named for the village of Cheddar in England, but today more cheddar cheese is made in Wisconsin than in the whole of Great Britain?

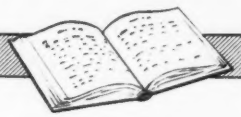
—that milk and ice cream are delivered by airplane to the mining camps in northern Canada? The miners pay one dollar a quart for milk at Goldfields, Saskatchewan, 450 miles from the nearest city.

—that in Scotland, "ice cream" is made by boiling for 30 to 60 minutes a mixture of milk, sugar and corn flour? This mixture is allowed to cool and is then frozen to a semi-solid consistency.

—that the major use for buttermilk now—aside from food for man and beast—is in paint?

—that butter production in the United States during the period 1931-35 accounted for more than one-third of the total for 21 leading countries? More than two billion pounds were produced annually by the United States during this period.

THINGS YOU'LL LIKE TO READ



YOU'RE THE DOCTOR—Victor G. Heiser, M. D. W. W. Norton & Company, 1939. $2.50.

Dr. Heiser discusses many phases of personal and public health, with observations based on his forty years of work in all parts of the world. He stresses nutrition as the most important factor in maintaining good health.

PRINCIPLES OF HEALTH EDUCATION—C. E. Turner. D. C. Heath and Company, 1939. Second edition. $2.00.

This book outlines a school health program, and discusses the development of a teaching technique that will make health interesting to pupils. It will be of value to all who are interested in health education.

NUTRITION AND PHYSICAL FITNESS — L. Jean Bogert. W. B. Saunders Company, 1939. Third edition. $3.00.

This is a practical textbook for the student of nutrition. The new edition contains much new, revised or rewritten material.

YOU ARE WHAT YOU EAT

(Continued from Page Five)

rice in all government institutions. The effect was magical. In a few weeks no new cases appeared and those not seriously ill began to recover. As long as this executive order was enforced there were no further cases, and the rate of 1,000 deaths a year dropped to zero.

Half of the twelve million inhabitants of Sind in northern India have stones in the bladder and live in terrible pain. Dr. McCarrison fed the Sind diet to healthy rats; with dramatic suddenness fifty per cent developed stones. No stones, however, formed in a group of rats fed this same diet with the simple addition of a daily teaspoonful of milk. It is probable that millions of humans could be saved from disease if every day they would drink just one pint of milk.

A really enlightened diet, containing adequate amounts of milk, fruits, vegetables and eggs, will not only prevent dietary deficiency diseases but will also ward off many of the conditions that make surgical operations necessary. There is every reason to believe that the nation that can regulate its food consumption in accordance with scientific principles may not only produce a larger percentage of sound, healthy people, but at a cost infinitely less, and by inference become the leaders of the world.

Note—A mimeographed sheet containing references to all major items mentioned in NUTRITION NEWS may be obtained on request from the National Dairy Council, Chicago, Illinois.

A SCIENTIFIC STUDY

(Continued from Page Seven)

great an excess of base over acid as the foods without any milk.

With the additional quantity of milk in the diet, all of the children responded with larger nitrogen and acid-base mineral retentions and better bone formation. The younger children apparently were more receptive to an increased storage upon ingestion of larger quantities of milk. When 1,000 grams of milk (about 1 quart) were given daily, the level of excess base retention of the children approximated the amount desirable for growth.

A PRACTICAL PLAN

(Continued from Page Seven)

Several different programs were planned. The rat-feeding demonstrations were outstandingly successful. White rats of an age comparable to the 6-year-old child were used to demonstrate the effects of the diet common to a given community, and remedial measures were shown with parallel rat groups. Interest soon spread to the adults of each community, and records of one school show that over 8,000 people observed their rat demonstration.

There is considerable evidence that a real step has been made toward the goal of effecting food habit changes throughout the county. Milk, whole wheat bread, fruit and vegetables are used increasingly in school lunches. Women comment on the diet changes made by older members of the families. Home economics, science, physical education and grade teachers in several schools are using the findings of last year's food habit study as the nucleus for this year's nutrition teaching.